

4.11 Biological Resources

Section 4.11.1 presents the methodology SEA used to determine potential effects on biological resources from the Proposed Action without mitigation. A discussion of the No-Action Alternative follows in Section 4.11.2. Section 4.11.3 details the potential effects resulting from the Proposed Action by category: plant communities, wildlife, Federal, state and local conservation and natural areas, and Federally- and state-listed threatened and endangered species.

The following is a summary of the findings presented in this section:

- SEA evaluated the expected effects of the Proposed Action and associated construction activities on plants, wildlife (including threatened, endangered, and state sensitive species), and natural areas in the study area.
- In general, plant communities, wildlife, and natural areas along the EJ&E rail lines would experience a higher probability of exposure to hazardous material spills and train collisions as compared to current conditions due to an increase in freight rail traffic; plant communities, wildlife, and natural areas along the CN subdivisions would experience a lower probability of exposure to hazardous material spills and train collisions as compared to current conditions. CN's proposed right-of-way maintenance and vegetation control program would not involve changes to current practices. Changes in rail line operations would lead to increased noise that would be experienced by wildlife species living in patches of natural habitat along segments of the EJ&E rail line. Bird populations within 500 feet of the rail line may experience behavioral and/or physiological effects and/or masking of communication signals because of the increased noise. Eighteen forest preserves, nature preserves, state parks, or trails would be affected by the increased freight train traffic along the EJ&E rail line. [Section 4.11.3.1-3]
- There are two endangered species that could potentially be affected by the Proposed Action: Hine's emerald dragonfly and the Karner blue butterfly. Changes in rail operations are not likely to adversely affect either of these species. [Section 4.11.3.4] There are also several state-listed protected species that could occur along the EJ&E rail line. Although increased traffic on the EJ&E rail line may increase the risk of mortality of these species, the risk is slight. [Section 4.11.3.5]
- The proposed construction of connections and double track could affect plant communities because of ground disturbance in those areas. Wildlife species living in patches of natural habitat within the construction limits along segments of the EJ&E rail line would be displaced. SEA concluded that because the affected wildlife habitat is general minor and wildlife is mobile, the proposed construction would not affect wildlife. The Munger Alternative – Original Proposal and Munger Alternative – Northwest Quadrant, would directly affect Pratt's Wayne Woods Forest Preserve, a designated natural area. [Section 4.11.4.2] Construction activities for all configurations of the Matteson connection would contribute to a loss of habitat at Powis Marsh, which could result in reduced breeding activity of marsh and grassland birds. [Section 4.11.4.3]
- The threatened Eastern prairie fringed orchid (also known as the Prairie white-fringed orchid) has the potential to occur at the Proposed Griffith Connection and/or wetland margins. SEA determined that, with appropriate mitigation, this proposed connection is not likely to adversely affect this plant species. There are also several state-listed species that could be affected by construction activities. SEA would require the Applicants to perform surveys prior to construction to identify and locate these protected species. [Section 4.11.4.5 and 4.11.5]

4.11.1 Methodology

SEA evaluated expected effects of the Proposed Action for both changes in rail operations and associated new construction on plants, wildlife (including Federal- and state-listed threatened and endangered [T&E] species), and natural areas in the Study Area. For the specific Study Area for each biological resource see Section 3.11, Biological Resources. SEA used data from published reports, feasibility studies, regulatory agency documents, guidance manuals, discussions with resource personnel, aerial photographs, United States Geological Survey (USGS) topographic maps, field visits (February 2008 field inspections using public access areas and April 2008 field inspections using hi-rail vehicles), and analysis of Geographic Information Systems (GIS) databases. SEA also conducted observational surveys within selected, accessible sections of the Study Area and consulted with state and Federal agencies regarding the presence of any T&E species in the Study Area. SEA interviewed local and regional agency biological experts and further researched the preferred habitat and behavior of T&E species to determine whether they occur in the Study Area and whether the Proposed Action might affect them. SEA analyzed operation and maintenance effects on natural areas including wildlife sanctuaries, refuges, state parks, wetlands, and vegetation communities.

SEA also calculated the potential acreage of construction impacts of the six connections and four locations of double track using resource data and right-of-way (ROW) boundaries in the locations where the constructions are proposed. SEA determined land cover using high-resolution aerial photography (one-foot resolution in Illinois and six inches resolution in Indiana) to create GIS polygons of distinct landscape types and then conducted a field visit to verify landscape types. Landscape types were based on the Chicago Wilderness (CW) Terrestrial Community Classification System (CW 2007b).

4.11.2 No-Action Alternative

Under the No-Action Alternative, the Applicants would not change operations and maintenance of the EJ&E or CN Rail Lines. The No-Action Alternative would not change effects on plant communities, wildlife, natural areas, or T&E species.

4.11.3 Proposed Action

4.11.3.1 Proposed Changes in Rail Line Operations

Under the Proposed Action, train traffic volumes generally increase on the EJ&E Rail Lines and decrease on the CN Rail Lines. Although the direct effects on plant communities; wildlife; federal, state, and local conservation and natural areas; and federally- and state-listed T&E species would not change relative to the existing condition, the probability of adverse effects changes as traffic volumes change. For example, plant communities and wildlife along CN Rail Lines would experience a lower probability of exposure to hazardous materials spills and train collisions, respectively, due to a decrease in train traffic. At the same time, local conservation and natural areas adjacent to EJ&E Rail Lines would experience increased ambient noise levels because of increased traffic. Under the Proposed Action, biological resources adjacent to the CN rail lines would experience minor, beneficial effects due to decreased train traffic.

Plant Communities

Under the Proposed Action, the Applicants would acquire control of the EJ&E land, rail, and related assets. SEA evaluated CN's proposed ROW maintenance and vegetation control practices and determined that the Proposed Action would not involve changes to maintenance. Therefore, plant communities would not be affected by the Proposed Action.

Wildlife

Changes in rail line operations would lead to increased noise (see Section 4.10, Noise). A number of continuous-noise studies from vehicular traffic have identified effects to wildlife (USFWS 2008b). Very little research exists on the effects of intermittent railroad noise on wildlife species. Birds have been studied in more detail and could be adversely affected by railroad noise (FRA 2008e; Slabbekoorn and Ripmeester 2008). Studies have linked lower species diversity and lower breeding densities to roads and high traffic volumes; however, there is a lack of evidence that noise is the leading cause (Slabbekoorn and Ripmeester 2008).

Wildlife species live in patches of natural habitat along segments of the EJ&E rail line that would experience increased noise. These populations already are exposed to noise levels from train traffic (See Table 3.10-2 in Chapter 3). Monitoring at 500 feet from the rail line found existing noise levels range from 51 to 63 dBA; indicating wildlife may have become accustomed to noise and/or adjusted to repeated noises resulting from human activity (Dooling and Popper 2007). The projected average noise increase from additional trains at 500 feet from the rail line is 5 to 6 dBA Ldn (average 24-hour noise level, see Section 4.10 for a detailed explanation). Bird populations within 500 feet of the rail line may experience behavioral and/or physiological effects and/or masking of communication signals because of the additional noise during train pass-bys. Beyond 500 feet, minimal effects on bird populations would be expected.

With increased rail traffic, accidents or equipment failure could release petroleum products from the train engines and associated machinery into adjacent wildlife habitats. In the event of a spill, the Applicants would be required to clean up the area to prevent potential harm to the environment. Section 4.2.5, Hazardous Materials Transportation Safety in Chapter 4, discusses response plans to hazardous materials spills. SEA concluded that there would be a potential increase in the possibility of a release at any location along the EJ&E, including areas adjacent to natural and conservation areas because of increased train miles resulting from the longer route, and more carloads. Even on the EJ&E rail line, the possibility of a hazardous materials release would remain remote because of the regulatory and other safeguards already in place.

Federal, State, and Local Conservation and Natural Areas

Section 3.11.3.5 lists and describes the Federal, state, and local conservation and natural areas in the Study Area. Table 4.11-1, which follows, summarizes the natural areas in the Study Area (from north to south and counterclockwise around the arc), and identifies those with potential effects from operations due to the Proposed Action. The table describes those natural areas subject to potential effects; see Appendix M for those natural areas with no expected effects. Section 4.11.3.3 focuses on those areas that are managed for wildlife or for native plant communities and does not address local parks, which are maintained for human use. See Section 4.5, Land Use, for a discussion on trails and local parks.

SEA has identified four primary categories of risk to natural areas associated with the Proposed Action. The categories of risk relate to wildlife management and use of the natural areas:

- Noise and vibration effects: Increases in noise and vibration associated with increased train traffic on the EJ&E rail line could affect wildlife habitat, nesting, and breeding viability for some animal species. Within 500 feet of the rail line, increased noise could affect animal behavior and mask wildlife communication signals; however, animals in the area already live with daily noise from trains. Therefore, noise and vibration could have minor effects on wildlife and natural areas adjacent to the EJ&E rail line. Conversely, wildlife and natural areas adjacent to the CN rail line would experience a decrease in proximal noise effects due to decreased train traffic.

- Train/species collisions: Animals living in and passing through areas along the EJ&E rail line may have a higher risk of being struck by trains due to increased train traffic. However, animals in the area have adapted to existing train traffic and the increased potential for animal/train collisions would not affect any particular animal populations.
- Hazardous material spills: Accidents or equipment failure could release petroleum products from train engines and associated machinery into adjacent natural areas. Although releases of hazardous materials may occur, they are rare and difficult to predict. Section 4.2.5, Hazardous Materials Transportation Safety, discusses hazardous material spill response plans. The probability of a hazardous material spill is remote and if one did occur, the spill would be contained according to the spill response plan.
- Wildfires: Operation and maintenance of the EJ&E and CN rail lines could occasionally ignite wildfires. During dry periods, the danger of fires would increase with the amount of train traffic. Fires not confined to the ROW could affect adjacent natural areas. Because the probability of a wildfire igniting is remote, wildfires would not affect natural areas.

The following natural areas would be affected by changes in operation under the Proposed Action (see Figure 3.1-1 for locations of natural areas):

Table 4.11-1. Potential Effects on Natural Areas from Changes in Operations on the EJ&E Rail Line					
Natural Areas by County, State	Type of Natural Area	Segment^a	Proposed Train Traffic Change (trains per day)	Change in Noise Levels within 500 feet (decibels)^b	Geographic Relationship to the EJ&E Rail Line (Existing Community Types)^c
Lake County, Illinois					
Cuba Marsh Forest Preserve; Illinois Natural Areas Inventory (INAI) 1238 Cuba Marsh Natural Area	Forest preserve	EJ&E-14C	15.0	6 dBA	EJ&E rail line bisects preserve; (marsh/forest/grassland)
Cook County, Illinois (Western Subdivision)					
Spring Creek Valley Forest Preserve Spring Lake Nature Preserve	Forest preserve	EJ&E-14D	15.0	6 dBA	EJ&E rail line bisects preserve; (grassland/forest)
Arthur L. Janura Forest Preserve; Shoe Factory Road Prairie Nature Preserve; INAI 0394	Nature preserve	EJ&E-14D	15.0	6 dBA	EJ&E rail line runs adjacent to forested portion of park along Poplar Creek; (marsh/forest/grassland)
DuPage County, Illinois					
James "Pate" Philip State Park	State park	EJ&E-13B	17.0	6 dBA	EJ&E rail line runs within 500 feet of upland grassland in park; (grassland)
Pratt's Wayne Woods Forest Preserve; INAI 1401	Forest preserve	EJ&E-12	19.0	7 dBA	EJ&E rail line bisects grassland, marsh; (marsh/forest/grassland)
West Chicago Prairie Forest Preserve; INAI 05053; Truitt-Hoff Nature Preserve	Forest preserve Nature preserve	EJ&E-12	19.0	7 dBA	EJ&E rail line bisects the prairie area, contains Elemental Occurrence Records for Federally-listed T&E species, existing rail yards located in natural areas; (marsh/forest/grassland)
Fermilab	Natural area	EJ&E-11	20.9	5 dBA	Remnant and restored grassland and marsh habitat adjacent to EJ&E rail line; (marsh/grassland)

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Natural Areas by County, State	Type of Natural Area	Segment ^a	Proposed Train Traffic Change (trains per day)	Change in Noise Levels within 500 feet (decibels) ^b	Geographic Relationship to the EJ&E Rail Line (Existing Community Types) ^c
IDNR Elemental Occurrence Record Animal Assemblage - Rookery (unnamed)	Rookery	EJ&E-10A	23.8	4 dBA	INAI site adjacent to east side of EJ&E rail line; highly disturbed, surrounded by new development; (rookery)
Will County, Illinois					
Weisbrook Preserve (proposed)	Forest Preserve	EJ&E-10C EJ&E_-10D	23.8	No effect ^b	EJ&E rail line runs near this proposed preserve, the Forest Preserve District of Will County plans to restore this area and develop a 1-mile trail (preserve) on the abandoned Normantown Road; (agricultural field)
Lake Renwick Heron Rookery Forest and Nature Preserve; INAI 1060 and 1748; IDNR Elemental Occurrence Record Animal Assemblage - Rookery; Lake Renwick East Land and Water Reserve	Forest preserve Nature preserve	EJ&E-9B	23.8	4 dBA	EJ&E rail line bisects created and natural heron rookery; (rookery)
Joliet Iron Works Forest Preserve/Heritage Trail	Forest preserve	EJ&E-8A	23.8	No effect ^b	EJ&E rail line runs adjacent to this walking trail, contains a restored floodplain forest, formerly disturbed landscape; (floodplain forest)
Old Plank Road Trail	Trail	EJ&E-7A	21.9	No effect ^b	Mostly disturbed cultural landscape used as a trail (prairie remnant and savanna)
Wauponsee Glacial Trail Forest Preserve	Forest preserve	EJ&E-7B	21.9	No effect ^b	Trail being developed on existing disturbed former rail bed; (trail)
Sugar Creek Preserve	Forest preserve	EJ&E-7B	21.9	6 dBA	Minimal ecological value and function presently in upland areas; (floodplain forest/agricultural fields)

Table 4.11-1. Potential Effects on Natural Areas from Changes in Operations on the EJ&E Rail Line

Natural Areas by County, State	Type of Natural Area	Segment ^a	Proposed Train Traffic Change (trains per day)	Change in Noise Levels within 500 feet (decibels) ^b	Geographic Relationship to the EJ&E Rail Line (Existing Community Types) ^c
Cook County, Illinois (Eastern Subdivision)					
Sauk Trail Woods; Indian Hill Woods Forest Preserve Thorn Creek Trail System	Forest preserve trail	EJ&E-6	23.0	No effect ^b	Bisects forested uplands and ravine; (upland forest)
Lake County, Indiana					
Gaylord Butterfly Tract	Natural area	EJ&E-5B	24	5 dBA	EJ&E rail line runs adjacent to grassland and savanna; (wet-mesic sand prairie and dry-mesic sand prairie)
Ivanhoe South Nature Preserve	Nature preserve	EJ&E-2	20.0	5 dBA	Habitat and release site for Karner blue butterfly, adjacent to EJ&E rail line; (mesic sand savanna/marsh/wet sand prairie/dry-mesic sand savanna/shrub swamp/pond)
Ivanhoe Dune and Swale TNC Nature Preserve (West)	Nature preserve	EJ&E-2	20.0	5 dBA	Habitat and release site for the Karner blue butterfly, adjacent to EJ&E Segment 2; (mesic sand savanna/marsh/wet sand prairie/dry-mesic sand savanna/shrub swamp/pond)

Notes:

^a See Figure 3.1-1 for the location of the EJ&E segment.

^b Area affected by an increase in trains on the EJ&E rail line is currently not managed for wildlife, so the changes in noise levels were not analyzed.

^c Community type is based on the Chicago Wilderness Terrestrial Community Classification System, found in CW, (2007b), *Biodiversity Recovery Plan*, retrieved on May 20, 2008, <http://www.chicagowilderness.org/pubprod/brp/index.cfm..>

Federally-Listed Threatened and Endangered Species

Table 4.11-2, below, shows Federally-listed T&E species in the Study Area with potential to be affected by the Proposed Action.

Table 4.11-2. Potential Effects on Federally Listed Species Along the EJ&E Rail Line Due to Operational Changes			
Common and Scientific Name	Status ^a (State)	Segment ^b	Potential Effect
Hine's emerald dragonfly (<i>Somatochlora hineana</i>)	E (IL)	EJ&E-9B EJ&E -18	Train collision
Karner blue butterfly (<i>Lycaeides melissa samuelis</i>)	E (IN)	EJ&E-2 EJ&E-3 EJ&E-5B	Train collision

Notes:

^a E=endangered species

^b See Figure 3.1-1 for locations of the EJ&E segments.

Hine's Emerald Dragonfly. USFWS has designated the area directly adjacent to the Paul Ales Branch of the EJ&E rail line (EJ&E Segment 18) as critical habitat for the Hines emerald dragonfly because larvae are found within feet of the rail bed (USFWS 2008a). The USFWS states that as trains operate on this segment, vibration of the tracks and vertical deflection of the rail bed causes native sediments to be pushed from the overlying rail bed into the dolomite bedrock, causing adverse impacts to larval Hine's emerald dragonfly (USFWS 2008a). To minimize these impacts, EJ&E has agreed to keep train speeds between 4 and 6 mph at all times on EJ&E Segment 18 in order to reduce vibration impacts to the larvae. The Proposed Action would not change operations on the Paul Ales Branch so larval Hine's emerald dragonfly habitat would not be affected beyond current operations.

Additionally, Hine's emerald dragonflies occur in the Des Plaines River Valley and are known to disperse between sites (2.0 to 3.4 miles) within the Des Plaines River Valley. The Applicants propose to increase average rail traffic on EJ&E Segment 9B from 18.5 to 42.3 trains per day. The risk of collisions between trains and Hine's emerald dragonfly individuals could increase with the proposed increase in traffic in EJ&E Segment 9B. EJ&E segment 9B is located at the southernmost end of the Critical Habitat Area for the Hine's emerald dragonfly in the Des Plaines River Valley and rail operations on this segment are not currently restricted under USFWS agreements. Increases in traffic on this segment are not likely to adversely affect this species.

With continuing appropriate mitigation, the Proposed Action is not likely to adversely affect the Hine's emerald dragonfly. See Chapter 6, Mitigation, for SEA's proposed mitigation for the Hine's emerald dragonfly.

Karner Blue Butterfly. The larvae of the Karner blue butterfly feed on a single plant species, wild lupine (*Lupinus perennis*), limiting its habitat to locations where this plant grows. Karner blue butterflies and their supportive habitat exist in numerous areas in the Indiana portion of the Study Area and are known to use rail lines as migration corridors between sites. Near Gary, the EJ&E and CN rail lines may be viewed as connecting corridors between the Ivanhoe South Nature Preserve, the Ivanhoe Dune and Swale Nature Preserve, the Gibson Woods Nature Preserve, Toleston Ridges Preserve, and DuPont Dune and Swale area identified in the Safe Harbor Agreement between USFWS and TNC.

The Proposed Action is not likely to adversely affect the Karner blue butterfly habitat, and may retain the necessary corridor setting for the species. The risk of collisions between trains and Karner blue butterfly individuals could increase with the proposed increase in traffic. However, since this species

is not a strong flier, and only tends to travel very short distances between nectar sources, this risk appears to be very slight.

State-Listed Threatened and Endangered Species

Table 4.11-3, below, shows state-listed T&E species that could occur in the Study Area. State-listed T&E species that might be affected by the Proposed Action were grouped into functional categories called guilds based on common life history traits and habitat requirements. Species that are both Federal- and state-listed are discussed above in the section covering Federally listed T&E species. A more detailed examination of the guilds listed in the table and potential effects follows.

Table 4.11-3. Potential Effects on State-Listed Species Along the EJ&E Rail Line				
Guild^a	Common and Scientific Name	Status^b (State)	Segment^c	Potential Effect
Grassland bird species	Henslow's sparrow (<i>Ammodramus henslowii</i>)	T (IL)	EJ&E-13A, 13B, 12,5A	Noise or train collision
		E (IN)	EJ&E-4	
	Short-eared owl (<i>Asio flammeus</i>)	E (IL)	EJ&E-12, 13B	
	Upland sandpiper (<i>Bartramia longicauda</i>)	E (IN)	EJ&E-2	
Marsh bird species	Henslow's sparrow (<i>Ammodramus henslowii</i>)	T (IL)	EJ&E-13A, 13B, 12, 5A	Noise or train collision
		E (IN)	EJ&E-4	
	Short-eared owl (<i>Asio flammeus</i>)	E (IL)	EJ&E-12, 13B	
	Black tern (<i>Chlidonias niger</i>)	E (IL)	EJ&E-12, 13B	
		E (IN)	EJ&E-0,1, 3, 20, 21, 22	
	Common moorhen (<i>Gallinula chloropus</i>)	T (IL)	EJ&E-12, 13B, 13A, 18	
	Sandhill crane (<i>Grus canadensis</i>)	T (IL)	EJ&E-11, 12, 13B, 13A	
	Least bittern (<i>Ixobrychus exilis</i>)	T (IL)	EJ&E-10A, 12, 13B, 3A, 18	
		E (IN)	EJ&E-0, 1, 3, 5B, 22	
	King rail (<i>Rallus elegans</i>)	E (IL)	EJ&E-12, 13B, 18	
		E (IN)	EJ&E-0, 1, 3, 21, 22	
	Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	E (IL)	EJ&E-10A, 12, 13B, 13A, 14D, 14C	
	American bittern (<i>Botaurus lentiginosus</i>)	E (IN)	EJ&E-0, 1, 3, 22	
	Marsh wren (<i>Cistothorus palustris</i>)	E (IN)	EJ&E-0, 1, 3, 4, 20, 21, 22	
	Virginia rail (<i>Rallus limicola</i>)	E (IN)	EJ&E-0, 1, 2, 3, 20, 22	
Rookery bird species	Black-crowned night heron (<i>Nycticorax nycticorax</i>)	E (IL)	EJ&E-9B, 10A, 12, 13B EJ&E-14C EJ&E-15	Noise or train collision
Wetland reptile species	Blanding's turtle (<i>Emydoidea blandingii</i>)	T (IL)	EJ&E-18, 9B, 23, 11, 12, 13B, 14B	Train collision
		E (IN)	EJ&E-0, 1, 2, 3, 21, 22	
	Spotted turtle (<i>Clemmys guttata</i>)	E (IN)	EJ&E-0, 1, 3, 22	
Grassland animal species	Franklin's ground squirrel (<i>Spermophilus franklinii</i>)	E (IN)	EJ&E-0, , 2, 3, 20, 21	Train collision

Table 4.11-3. Potential Effects on State-Listed Species Along the EJ&E Rail Line

Guild ^a	Common and Scientific Name	Status ^b (State)	Segment ^c	Potential Effect
Dune invertebrate species	Noctuid moth (unnamed) (<i>Apamea burgessi</i>)	T (IN)	EJ&E-0, 1, 22	Train collision
	Noctuid moth (unnamed) (<i>Archanara laeta</i>)	T (IN)	EJ&E-0, , 22	
	Dusted skipper (<i>Atrytonopsis hianna</i>)	T (IN)	EJ&E-0, 1, 2, 21, 22	
	Silver-bordered fritillary (<i>Boloria selene myrina</i>)	T (IN)	EJ&E-4, 5B	
	Noctuid moth (unnamed) (<i>Capis curvata</i>)	T (IN)	EJ&E-0, 1, 3, 22	
	Two-lined cosmotettix (<i>Cosmotettix bilineatus</i>)	T (IN)	EJ&E-5B, 20, 21	
	Noctuid moth (unnamed) (<i>Eucrotopcnemis fimbriaris</i>)	T (IN)	EJ&E-0, 1, 2, 21, 22	
	The pine streak (<i>Faronta rubripennis</i>)	T (IN)	EJ&E-0, 1, 21, 22	
	Indiangrass leafhopper (<i>Flexamia reflexus</i>)	T (IN)	EJ&E-0, 1, 21, 22	
	Silvery blue (<i>Glaucopsyche lygdamus couperi</i>)	E (IN)	EJ&E-5B	
	Ottoe skipper (<i>Hesperia ottoe</i>)	E (IN)	EJ&E-0, 1, 3, 22	
	Grote's black-tipped quaker (<i>Loxagrotis grotei</i>)	T (IN)	EJ&E-0, 1, 3, 22	
	Great copper (<i>Lycaena xanthoides</i>)	E (IN)	EJ&E-0, 1, 22	
	Louisiana macrochilo moth (<i>Macrochilo louisiana</i>)	T (IN)	EJ&E-0, 1, 2, 3, 21, 22	
	Newman's brocade (<i>Meropleon ambifuscum</i>)	T (IN)	EJ&E-0, 1, 2, 3, 21, 22	
	Noctuid moth (unnamed) (<i>Oligia obtuse</i>)	E (IN)	EJ&E-0, 1, 2, 3, 21, 22	
	Beer's blazing star borer moth (<i>Papaipema beeriana</i>)	T (IN)	EJ&E-0, 1, 2, 3, 5B, 21, 22	
	Columbine borer (<i>Papaipema leucostigma</i>)	T (IN)	EJ&E-0, 1, 22	
	Royal fern borer moth (<i>Papaipema speciosissima</i>)	T (IN)	EJ&E-0, 1, 5B, 22	
	Spittle bug (<i>Paraphilaenus parallelus</i>)	T (IN)	EJ&E-0, 1, 22	
	Grasshopper (unnamed) (<i>Paroxya atlantica</i>)	T (IN)	EJ&E-0, 1, 22	
	Large-headed grasshopper (<i>Phoetaliotes nebrascensis</i>)	T (IN)	EJ&E-0, 1, 22	
	Ernestine's moth (<i>Phytometra ernestinana</i>)	E (IN)	EJ&E-0, 1, 2, 3, 21, 22	
	Big broad-winged skipper (<i>Poanes viator viator</i>)	T (IN)	EJ&E-5B	

Table 4.11-3. Potential Effects on State-Listed Species Along the EJ&E Rail Line

Guild ^a	Common and Scientific Name	Status ^b (State)	Segment ^c	Potential Effect
	Kansas prairie leafhopper (<i>Prairiana kansana</i>)	E (IN)	EJ&E-0, 1, 3, 22	
	Bunchgrass skipper (<i>Problema byssus</i>)	T (IN)	EJ&E-0, 1, 2, 3, 5B, 21, 22	
	Aureolaria seed borer (<i>Rhodoecia aurantiago</i>)	T (IN)	EJ&E-0, 1, 22	
	Regal fritillary (<i>Speyeria idalia</i>)	E (IN)	EJ&E-5B	

Sources:

- Arnett, Ross H., Jr., 2000, *American Insects: A Handbook of the Insects of America North of Mexico*, 2nd Ed., Boca Raton, FL: CRC Press.
- Brewer, Gwenda L., 1991, "1991 Summary Report: Location of Breeding Colonies and Evaluation of Critical Nesting Habitat for the Black Tern in Northwestern Minnesota: Kittson and Roseau Counties," Minnesota Department of Natural Resources.
- Chadde, Steve W., 2002, *A Great Lakes Wetland Flora*, 2nd Ed., Laurium, MI: Pocketflora Press.
- Coffin, Barbara A., and Lee Phannmuller, 1988, *Minnesota's Endangered Flora and Fauna*, Minneapolis: University of Minnesota Press.
- Connecticut Department of Environmental Protection, 2008, "Species and Habitats," *Connecticut's Comprehensive Wildlife Conservation Strategy*, retrieved on April 10, 2008, http://www.ct.gov/dep/cwp/view.asp?a=2723&q=325892&depNav_GID=1719&depNav=|.
- Currier, C.L., 2000, "Special animal abstract for *Chlidonias niger* (black tern)," Michigan Natural Features Inventory, Lansing, MI, available online at http://web4.canr.msu.edu/mnfi/abstracts/zoology/Chlidonias_niger.pdf.
- DeLong, Dwight M., 1942, *A Monographic Study of the North American Species of the Subfamily Gyponinae (Homoptera: Cicadellidae)*, Columbus, OH: Ohio State University Press.
- DeLong, Dwight M., 1948, "The Leafhoppers, or Cicadellidae, of Illinois (Eurymelinae-Balcluthinae)," *Illinois Natural History Survey Bulletin* 24(2): 97-376.
- Ehrlich, Paul, David S. Dobkin, and Darryl Wheye, 1988, *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*, New York: Fireside Books.
- Gleason, Henry A., and Arthur Cronquist, 1991, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 2nd Ed., New York: New York Botanical Garden.
- Hamilton, Andrew, 1982, *The Insects and Arachnids of Canada, Part 10, The Spittlebugs of Canada: Homoptera: Cercopidae*, Ottawa, Canada: Biosystematics Research Institute.
- IDNR (2008f), "Illinois Conservation Priority Invertebrates," *Illinois Department of Natural Resources*, retrieved on April 10, 2008, <http://dnr.state.il.us/ORC/WildlifeResources/theplan/invertebrates.asp>.
- INHS, 1997, "*Elliptio dilatata* (Rafinesque, 1820): Spike," retrieved on April 10, 2008, http://www.inhs.uiuc.edu/cbd/musselmanual/page68_9.html, December 15, 1997.
- INHS, 2004, "*Clemmys guttata* - Spotted Turtle," *INHS Amphibian & Reptile Collection*, retrieved on April 10, 2008, http://www.inhs.uiuc.edu/cbd/herpdist/species/cl_guttata.html, April 6, 2004.
- Layberry, Ross A., Peter W. Hall, and J. Donald Lafontaine, 1998, *The Butterflies of Canada*, Toronto: University of Toronto Press.
- Metzler, Eric H., John A. Shuey, Leslie A. Ferge, Richard A. Henderson, and Paul Z. Goldstein, 2005, *Contributions to the Understanding of Tallgrass Prairie-Dependent Butterflies and Moths (Lepidoptera) and their Biogeography in the United States*, Columbus, OH: Ohio Biological Survey.
- Michigan State University Extension, 2007, "Rare Species Explorer," *Michigan Natural Features Inventory*, retrieved on April 10, 2008, <http://web4.msue.msu.edu/mnfi/explorer>.
- Mohlenbrock, Robert H., 1999, *The Illustrated Flora of Illinois: Sedges: Carex*, Carbondale, IL: Southern Illinois University Press.
- NatureServe, 2008, *NatureServe Explorer: An Online Encyclopedia of Life*, Version 7.0, retrieved on March 4, 2008, <http://www.natureserve.org/explorer/index.htm>.
- Ohio State University, 1999, "The Lepidoptera of Wayne County, Ohio," *The Ohio State University's Ohio Agricultural Research and Development Center (OARDC)*, retrieved on April 10, 2008, <http://www.oardc.ohio-state.edu/rb1192/single.asp?ID=721>.

- Ostroff, Andrea C., and Elmer J. Finck, 2003, "Mammalian Species: *Spermophilus franklinii*," No. 724, American Society of Mammalogists, July 30, 2003, Available online at http://www.science.smith.edu/departments/Biology/VHAYSSEN/msi/pdf/724_Spermophilus_franklinii.pdf.
- Rockburne, Eric W., and J. Donald Lafontaine, 1976, *The Cutworm Moths of Ontario and Quebec*, Ottawa, Canada: Research Branch, Canada Department of Agriculture.
- University of Alberta E.H. Strickland Entomological Museum, 2008, "Species Page - *Macrochilo louisiana*," *Entomology Collection*, retrieved on April 10, 2008, http://www.entomology.ualberta.ca/searching_species_details.php?s=816.
- University of Michigan Museum of Zoology, 2008, *Animal Diversity Web*, retrieved on April 10, 2008, <http://animaldiversity.org>.
- Wisconsin Department of Natural Resources, 2007, "Wisconsin State Threatened and Endangered Species," *Wisconsin Department of Natural Resources*, retrieved on April 10, 2008, <http://www.dnr.state.wi.us/org/land/er/wlist/statelisted.asp>, January 4, 2007.
- Wisconsin State Herbarium, University of Wisconsin - Madison, 1999, *Asclepias lanuginosa*, retrieved on April 10, 2008, <http://www.botany.wisc.edu/herbarium/wisflora/atlas/ASCLAN.gif>.

Notes:

- ^a A guild is a functional category based on species' common life history traits and habitat requirements.
- ^b E = endangered, T = threatened
- ^c See Figure 3.1-1 for locations of the EJ&E segments.

Grassland Bird Species. Large complexes of grassland bird habitats are found within numerous preserves along the EJ&E rail line, including Spring Creek Valley, Arthur L. Janura, Pratt's Wayne Woods, West Chicago Prairie, and Fermilab. Additional rail traffic may affect these species, but potential effects are expected to be minor because habitat structure would not be altered and the species currently occur in proximity to the rail line. Increased rail traffic along the EJ&E rail line would raise noise levels in habitat surrounding the Study Area. In most cases, minor increased noise levels would not affect grassland bird populations. Increased traffic on the EJ&E rail line may increase the risk of mortality of state-listed grassland birds from collisions with trains, but this risk is slight.

Marsh Bird Species. Similar to grassland birds, marsh bird species may also face an increased risk of harm and harassment due to increased rail traffic along segments near important preserves, including Cuba Marsh, Spring Lake, Arthur L. Janura, Pratt's Wayne Woods, West Chicago Prairie, Fermilab, Night Heron Marsh, Lake Renwick Heron Rookery, and Sugar Creek. Since the EJ&E rail line is currently in use, effects on these species related to the increased rail traffic are expected to be minor because habitat structure would not be altered and species currently occur in a rail environment. Increased rail traffic along the EJ&E rail line would raise noise levels in habitat surrounding the Study Area. In most cases, minor increased noise levels would not affect marsh bird populations. As a result of increased traffic, the risk of collisions between trains and marsh birds may increase, but this risk is slight.

Rookery Bird Species. The Study Area contains two documented heron rookeries, Lake Renwick Heron Rookery and an unnamed rookery south of Willow Creek City Park in Aurora, Illinois. IDNR documented the unnamed rookery in June 1993, located in a wetland complex directly adjacent to the EJ&E railroad (IDNR 2008e). This unnamed rookery is surrounded by development and may no longer be viable (IDNR 2008e). SEA observed no evidence of the rookery during spring, 2008 field observations. The Lake Renwick Heron Rookery is considered the most important rookery in Illinois.

In most cases, increased noise levels would not affect the rookeries. However, noise levels in suitable foraging habitat may affect bird densities or abundance. Since the EJ&E rail line is currently in use, SEA expects minor effects from noise because habitat structure would not be altered and species currently occur in a rail environment. As a result of additional trains, herons using the rookeries could experience an increased risk of mortality from train collision.

Wetland Reptile Species. Large marsh and wetland complexes, important to Blanding's turtle (*Emydoidea blandingii*), occur in numerous preserves in the Study Area, including Cuba Marsh,

Spring Creek Valley, Arthur L. Janura, Pratt's Wayne Woods, West Chicago Prairie, Fermilab, Lake Renwick Heron Rookery, and Sugar Creek. Given its tendency to move to find new habitat and breeding sites, the Blanding's turtle could experience increased mortality due to increased rail traffic. Likewise, the risk of mortality to spotted turtles (*Clemmys guttata*) from train collisions could increase during the turtle's active dispersal between wetland areas. SEA expects minor effects because habitat structure would not change and both species currently occur in a rail environment.

Dune Invertebrate Species. In the Indiana portion of Study Area, the EJ&E rail line runs along a continuum of natural communities associated with present and former Lake Michigan dunes (near lakeshore), dune and swale (Tolleston Strandplain), and sandy outwash (Hoosier Prairie area) (see Figure 3.11-1, Sheet 3, Natural Areas). As mobile species, state-listed invertebrates would experience an increased risk of mortality from train collisions where increased rail traffic is proposed.

In the Tolleston Strandplain, the Proposed Action would increase rail traffic through the dune and swale segments adjacent to the EJ&E rail line, as well as increase activity within Kirk Yard. Effects from the Proposed Action are likely to be negligible, because habitat along the EJ&E rail line is in a highly developed corridor that includes multiple rail lines controlled by other companies, the Chicago/Gary International Airport, developed residential areas, and multiple major road crossings including I-90, I-80/94 and Highway 20 in Gary.

For state-listed butterfly species in the Hoosier Prairie area, the proposed operational changes may represent a net benefit with a potential decrease in species/train collisions. Proposed rail traffic would increase along the EJ&E Segment 5B by approximately 24 trains per day, but would decrease along the CN Segment 23 A by approximately 19 trains per day. The benefit results from shifting traffic to the EJ&E rail line, which is buffered from natural areas by a petroleum storage facility. The CN rail line, meanwhile, directly transects the Hoosier Prairie area, where these species are located.

Conclusion

Under the Proposed Action SEA found:

- The risk of hazardous materials spills and wildfires would increase, but the probability of occurrence is still remote.
- The probability of train/animal collisions would increase, but remain low.
- Noise effects to wildlife, primarily in association with bird species of grassland, wetland, marsh, and rookery habitats are anticipated to increase, but effects are expected to be slight.
- The probability of train collisions with the Karner blue butterfly would slightly increase but remain low and would not adversely affect this species.
- Impacts to the Hines emerald dragonfly from ground vibration are not expected to change as current operating agreements with the USFWS would continue.
- An increased risk of train/animal collisions would affect state-listed grassland and marsh bird and wetland reptile species, but the effect would be slight. Noise from proposed rail operations would cause a slight effect to heron rookeries. Effects to dune invertebrates would be negligible as the rail corridor is already highly developed with numerous railroads and highways and the Chicago/Gary International Airport.
- The proposed relocation of rail traffic from the existing CN rail line within the Hoosier Prairie Area to the EJ&E rail line near the edge of the Hoosier Prairie Area would result in a beneficial effect on listed species at this location.

SEA acknowledges that rail operations would increase the risk of wildfires and recommends mitigation (discussed in Chapter 6, Mitigation) to suppress fires. SEA acknowledges that under the Proposed Action the Hines emerald dragonfly would continue to be impacted by rail operations and will recommend that the Applicants abide by current operating agreements and work with the USFWS toward continued protection of this species.

4.11.3.2 Proposed New Constructions

Connections

The Applicants propose to construct connections at a total of six locations either where CN rail lines intersect the EJ&E rail line (Munger, Joliet, Matteson, and Griffith), or as in the case of Ivanhoe and Kirk Yard, where they would allow for connection with another rail carrier's rail lines (see Section 2.2.2.1, Rail Connections). SEA assessed the potential environmental effects of the connections and their alternative configurations (including the No-Build Alternatives) on biological resources using the Applicants' preliminary plans and on a reasonable estimate of the potential area of ground disturbance (that is, construction limits). The Applicants may revise the construction limits after they have finalized the design of the proposed connections and completed any necessary land acquisition. The acres of construction impact reported in this EIS represent the best available information at the time of preparation.

No-Build Alternatives: Under the No-Build Alternatives, the Applicants would not construct connections at Munger, Joliet, Matteson, Griffith, Ivanhoe, or Kirk Yard. The No-Build Alternatives would not affect plant communities.

Plant Communities. SEA analyzed construction activities based on the entire construction areas provided by the Applicants. Effects to plant communities described below would occur at each of the following connections and are presumed to represent direct loss of the landcover types described.

- **Munger**

Applicants' Proposed Munger Connection: Construction would take place entirely within the EJ&E ROW and ComEd ROW within Illinois Natural Area Inventory (INAI) 1401 and surrounded by the Forest Preserve District of DuPage County's Pratt's Wayne Woods Forest Preserve. The Applicants propose to use retaining walls to minimize the construction footprint. The footprint would fall within Powis Marsh (a monoculture wetland marsh) with new construction taking place at a crossing of Brewster Creek along EJ&E Segment 12, and a small tributary stream crossing CN Segment 30A. Construction would potentially affect 5.7 acres, including 3.6 acres of railroad embankment and tracks, 1.3 acres of railroad embankment dominated by Eurasian grasses and mixed shrubs, and 0.1 acre of immature upland forest. The Powis Marsh portion of the construction area (0.7 acre) is dominated by a mix of reed canary grass (*Phalaris arundinacea*) and cattail (*Typha* spp.).

Construction would also result in temporary disturbance to Brewster Creek and its surrounding wetlands; potential effects could include increased suspended sediments and localized sedimentation. Adjacent habitat in Pratt's Wayne Woods Forest Preserve would be temporarily affected during construction due to increased activity and noise.

Munger Alternative–Original Proposal: This connection encroaches into the Powis Marsh area and would have required acquisition of approximately 1.0 acre of land from the Pratt's Wayne Woods Forest Preserve. Construction of this alternative would potentially affect 0.6 acre of rail bed, 1.6 acres of rail embankment overgrown with woody and herbaceous growth, 1.9 acres of Powis Marsh dominated by giant reed (*Arundo donax*) and reed canary grass and 0.8 acre of immature upland forest. The

Applicants modified their Proposed Munger Connection to eliminate acquisition of a portion the Pratt's Wayne Woods Forest Preserve.

Munger Alternative–UP Connection: This alternative would shift connecting rail traffic away from the core portions of Pratt's Wayne Woods Forest Preserve, and would require construction of connections at the edge of the southern end of Pratt's Wayne Woods and along the edge of the Brewster Creek Fen Nature Preserve. Preliminary mapping indicates that this alternative would directly affect a mix of natural area land cover types. This connection would bisect Brewster Creek Marsh and Western Prairie and Wayne Meadow. Additionally, traffic would shift to the edge of Dunham Forest Preserve, an area dominated by agricultural fields, immature forest, monotype marsh and bottomland forest, but planned for restoration to natural community conditions. Construction associated with this alternative would directly affect Brewster Creek Fen, and would require fill over a portion of the fen and along the upslope side of the fen, potentially affecting groundwater discharge. Kane County identifies the Brewster Creek Fen as a high quality Advanced Identification (ADID). These features are given special scrutiny for permit review. The Corps will generally require an individual permit which allows for public review and comment. High quality habitat sites are considered unmitigatable, though, and generally are determined to be unsuitable for filling activities. While some modification of high functional value sites may be allowed, special mitigation will be necessary to protect critical water quality and stormwater storage functions. Additionally, the construction area of the northwest connection would be located within 0.3 mile of the Tri-County Fen and 0.2 mile of an additional Elemental Occurrence Record-identified graminoid fen located north of the existing CN rail line. Construction would potentially affect a total of 10.1 acres, including 2.3 acres of existing rail embankment; 4.5 acres of mixed wet forest, fen, and associated wet meadow communities; 1.9 acres of mixed woody and herbaceous growth; and 1.4 acres of ditch and ditched portions of Brewster Creek.

Munger Alternative–Northwest Quadrant: This alternative would shift the construction limits onto Pratt's Wayne Woods Forest Preserve lands, but would minimize direct impacts to Powis Marsh. This alternative would potentially affect 4.5 acres covering a range of community types including a *Phragmites* *sp.* dominated marsh, an agricultural field, and a restored prairie. This alternative would require less embankment creation with less fill. This alternative would potentially affect 2.8 acres of restored prairie in Pratt's Wayne Woods Forest Preserve, 0.2 acre of agricultural grasses and cropped lands, 0.1 acre of existing rail and roadway, and 0.7 acre of rail embankment overgrown with woody and herbaceous growth. Two wetland areas would be affected, 0.3 acre of wet meadow west of Powis Road, and 0.6 acre of giant reed marsh associated with a small tributary of Brewster Creek connected by culverts under both EJ&E and CN rail lines.

- **Joliet**

Applicants' Proposed Joliet Connection: Construction would potentially affect a total of 5.0 acres, with 2.1 acres occurring on the existing railroad embankment or pavement. The remaining 2.9 acres include 2.8 acres of predominantly immature forest over disturbed soils dominated by green ash (*Fraxinus pennsylvanica*), cottonwood (*Populus deltoides*) and buckthorn (*Rhamnus cathartica*) and 0.1 acre of wet forest with standing water, with a similar species composition. Two small streams bisect the area with streambank communities dominated by reed canary grass with mixed wetland sedge and forb species present.

Joliet Alternative–Original Proposal: This connection would affect a total of 5.6 acres of industrial land whose use is dominated by automobile repair and salvage yards.

- **Matteson**

Applicants’ Proposed Matteson Connection: Construction would affect a total of 22.5 acres, with 8.9 acres currently in road, pavement, building, or railroad. The remaining 13.7 acres are dominated by immature forest, with 4.1 acres of immature upland forest and 6.6 acres of wet forest. Tree composition within these forested areas is similar, largely cottonwood, green ash, red maple (*Acer rubrum*), elm species (*Ulmus* spp.) and buckthorn (*Rhamnus cathartica*), with the area on the south side of the EJ&E rail line occupying a more lowland setting. Other land cover types include: 1.8 acres of turf grass with scattered planted trees; 0.2 acres of ditched stream and associated bank; and 0.3 acre of wetland mitigation area and 0.7 acre of associated upland buffer.

Matteson Alternative–Northeast and Southwest Quadrants: This alternative would shift traffic away from the Holden Park neighborhood, and generally keep traffic within mixed disturbed landscapes. Construction would directly affect 4.1 acres of immature upland forest, 0.2 acres of wet forest and 0.2 acres of land associated with a ditched tributary of Thorn Creek. The remaining 8.2 acres are represented by cultural landscapes including railroad, roads, buildings, rubble piles and turf grass.

Matteson Alternative–Southwest Quadrant: Construction would affect 2.4 acres, with 1.4 acres currently in pavement or railroad, 0.8 acre of immature forest, and 0.2 acre of wet forest.

- **Griffith**

Applicants’ Proposed Griffith Connection: Construction would affect a total of 5.9 acres, with 2.3 acres currently in railroad embankment, pavement, or buildings. The remaining 3.6 acres bisect a variety of natural communities and industrial landscapes including: 0.5 acre of immature aspen (*Populus* spp.) forest; 0.8 acre of prairie (Indian grass [*Sorghastrum* spp.], big bluestem [*Andropogon gerardii*], little bluestem [*Schizachyrium scoparium*], and Kentucky bluegrass [*Poa pratensis*]); 0.7 acre of black oak (*Quercus velutina*)/black cherry (*Prunus serotina*) upland forest; 0.7 acre of shrub swamp; and 0.6 acre of mixed emergent wetland; 0.1 acre of turf grass; and 0.2 acre of woody growth. These natural communities are small remnants in this area and are largely fragmented by past railroad and other cultural activities. Construction of this connection may cause greater habitat fragmentation.

The proposed Griffith connection is located between Oak Ridge Prairie County Park and Hoosier Prairie Nature Preserve, but would not directly affect either area.

- **Ivanhoe**

Applicants’ Proposed Ivanhoe Connection: Construction would affect a total of 3.2 acres within the dune and swale Tolleston Strandplain region of Gary, Indiana. Past excavation, earthmoving, and industrial practices have largely altered the entire land surface of the proposed construction area and there appears to be no remnant dune and swale within the construction area. Construction would affect 0.7 acre of degraded prairie along the rail embankment, 1.3 acres of excavated pond, 1.0 acre of Kentucky bluegrass dominated land, and 0.2 acres of bare, scraped soil.

The Ivanhoe South Nature Preserve is directly north of the proposed connection (across double track).

- **Kirk Yard**

Applicants' Proposed Kirk Yard connection: Construction would affect a total of 5.6 acres within a rail yard setting, with 2.6 acres currently in railroad berms or roadways. This site is located within the historic dune and swale region, though it is highly disturbed. The remaining 3.0 acres includes 1.8 acres of remnant and recolonized prairie along the EJ&E rail line, 0.2 acre of invasive tree and shrub species; and 1.0 acre of recently graded soil along the NS rail line (bare soil during April 2008 field survey). Soils under the remnant prairie appeared disturbed with mixed gravel typical of rail operations at varying levels in the soil. The species present include big bluestem, switchgrass (*Panicum virgatum*), little bluestem, and porcupine grass (*Hesperostipa spartea*), typical of the dune region and able to recolonize after limited human disturbance.

Wildlife. Construction of the connections would require the removal of wildlife habitat adjacent to the existing rail line. Some connections would require additional ROW acquisition. Wildlife species living in patches of natural habitat within the construction limits along segments of the EJ&E rail line that would undergo connection construction would be displaced. Because the affected wildlife habitat is generally minor and wildlife is mobile, SEA determined the construction of the connections would not affect wildlife. Wildlife may experience temporary increases in noise during construction.

Federal, State, and Local Conservation and Natural Areas. No Federal, State, or local conservation or Natural Areas occur within the vicinities of the proposed connections at Joliet, Matteson, Griffith, Ivanhoe, or Kirk Yard.

The Munger Alternative-Original Proposal and the Munger Alternative-Northwest Quadrant would directly affect Pratt's Wayne Woods Forest Preserve, a designated natural area. Construction activities for all configurations of the Matteson connection would cause a temporary increase in noise within or adjacent to the Pratt's Wayne Woods Forest Preserve. Construction would cause an indirect impact due to loss of habitat at Powis Marsh. Loss of habitat at Powis Marsh could result in reduced breeding activity of marsh and grassland birds.

Federally-Listed Threatened and Endangered Species. Table 4.11-4, as follows, shows Federally-listed T&E species in the Study Area with the potential to be affected by the construction activities for the connections.

Table 4.11-4. Potential Effects on Federally Listed Species Due to the Proposed Connections			
Common and Scientific Name	Status ^a (State)	Segment ^b	Potential Effect
Eastern prairie fringed orchid (in Illinois)/ Prairie white-fringed orchid (in Indiana) (<i>Platanthera leucophaea</i>)	T (IL and IN)	EJ&E-12	Individual mortality
Karner blue butterfly (<i>Lycaeides melissa samuelis</i>)	E (IN)	EJ&E-2, 3, 5B	Individual mortality

Notes:

^a E=endangered species, T= threatened species

^b See Figure 3.1-1 for locations of the EJ&E segments.

- **Eastern Prairie Fringed Orchid/Prairie White-Fringed Orchid**

This species is commonly known as the Eastern prairie fringed orchid in Illinois and the prairie white-fringed orchid in Indiana. This species has the potential to occur at the Applicants' Proposed Griffith Connection and/or wetland margins. SEA has determined that the proposed Griffith connection is not likely to adversely affect the Eastern prairie

fringed orchid/prairie white-fringed orchid. See Chapter 6, Mitigation, for SEA's proposed mitigation for the Eastern prairie fringed orchid/Prairie white fringed orchid.

- **Karner Blue Butterfly**

Karner blue butterfly habitat is located near the Applicants' proposed Ivanhoe connection. If wild lupine has established at the Ivanhoe connection or within the construction limits, there is potential to affect this butterfly, if eggs have been laid on this plant. With the appropriate mitigation, SEA has determined that the Proposed Ivanhoe Connection is not likely to adversely affect the Karner blue butterfly. See Chapter 6, Mitigation, for SEA's proposed mitigation for the Karner blue butterfly.

State-Listed Threatened and Endangered Species. Table 4.11-5, which follows, shows state-listed T&E species that could occur within the construction limits for the connections. State-listed T&E species that may be affected by the connections were grouped into functional categories called guilds based on common life history traits and habitat requirements. Species that are both Federal- and state-listed are discussed above. A more detailed examination of the guilds listed in the table and potential impacts are discussed below. See Chapter 6, Mitigation, for SEA's proposed mitigation for state-listed species.

Table 4.11-5. Potential Effects on State-listed Species due to Construction Activities at the Proposed Connections				
Guild^a	Common and Scientific Name	Status^b State	Segment^c	Potential Effects
Prairie plant species	Woolly milkweed (<i>Asclepias lanuginosa</i>)	E (IL)	EJ&E-14D	Habitat loss or individual mortality in construction area
	Prairie bush clover (<i>Lespedeza leptostachya</i>)	E (IL)	EJ&E-14D	
	Blazing star (<i>Liatris scariosa</i> var. <i>nieuwlandii</i>)	T (IL)	EJ&E-7D	
	Tube beard tongue (<i>Penstemon tubaeiflorus</i>)	E (IL)	EJ&E-12	
	Western rock jasmine (<i>Androsace occidentalis</i>)	T (IN)	EJ&E-4	
	Earleaf foxglove (<i>Agalinis auriculata</i>)	T (IN)	EJ&E-4,5B	
	Pale false foxglove (<i>Agalinis skinneriana</i>)	T (IN)	EJ&E-0,1,3,5B,22	
	Great Plains ladies'-tresses (<i>Spiranthes magnicamporum</i>)	E (IN)	EJ&E-0,1,3,22	
	Prairie redroot (<i>Ceanothus herbaceous</i>)	E (IN)	EJ&E-0,1,2,3,22	
	Hill's thistle (<i>Cirsium hillii</i>)	E (IN)	EJ&E-0,1,3,22	
	Sand-heather (<i>Hudsonia tomentosa</i>)	T (IN)	EJ&E-3,22	
Wetland plant species	Green-fruited burreed (<i>Sparganium emersum</i>)	E (IL)	EJ&E-13B,13A	Habitat loss or individual mortality in construction area
	Marsh speedwell (<i>Veronica scutellata</i>)	T (IL)	EJ&E-13B,13A	
	Little green sedge (<i>Carex viridula</i>)	T (IL)	EJ&E-12	
	White lady's slipper (<i>Cypripedium candidum</i>)	T (IL)	EJ&E-23,12	
	Prairie gray sedge (<i>Carex conoidea</i>)	T (IN)	EJ&E-4,5B	
	Crawe's sedge (<i>Carex crawei</i>)	T (IN)	EJ&E-0,1,3,21,22	
	Little prickly sedge (<i>Carex echinata</i>)	E (IN)	EJ&E-4,5B	
	Lake cress (<i>Armoracia aquatica</i>)	E (IN)	EJ&E-4,5B	

Table 4.11-5. Potential Effects on State-listed Species due to Construction Activities at the Proposed Connections

Guild ^a	Common and Scientific Name	Status ^b State	Segment ^c	Potential Effects
	Globe-fruited false-loosestrife (<i>Ludwigia sphaerocarpa</i>)	E (IN)	EJ&E-4,5B	
	Carey's smartweed (<i>Polygonum careyi</i>)	T (IN)	EJ&E-4,5B	
	Spotted pondweed (<i>Potamogeton pulcher</i>)	E (IN)	EJ&E-0,1,2,3,22	
	Strict blue-eyed-grass (<i>Sisyrinchium montanum</i>)	E (IN)	EJ&E-0,1,2,3,22	
	Slender cotton-grass (<i>Eriophorum gracile</i>)	T (IN)	EJ&E-0,1,2,3,22	
Grassland bird species	Henslow's sparrow (<i>Ammodramus henslowii</i>)	T (IL), E (IN)	EJ&E-13A, 13B, 12, 5A, 4	Habitat loss
	Short-eared owl (<i>Asio flammeus</i>)	E (IL)	EJ&E-12,13B	
	Upland sandpiper (<i>Bartramia longicauda</i>)	E (IN)	EJ&E-2	
Marsh bird species	Henslow's sparrow (<i>Ammodramus henslowii</i>)	T (IL), E (IN)	EJ&E-13A,13B,12,5A	Habitat loss
	Short-eared owl (<i>Asio flammeus</i>)	E (IL)	EJ&E-12,13B	
	Black tern (<i>Chlidonias niger</i>)	E (IL, IN)	EJ&E-12,13B, 0, 1, 3, 20, 21, 22	
	Common moorhen (<i>Gallinula chloropus</i>)	T (IL)	EJ&E-12,13B,13A,18	
	Sandhill crane (<i>Grus canadensis</i>)	T (IL)	EJ&E-11,12,13B,13A	
	Least bittern (<i>Ixobrychus exilis</i>)	T (IL), E (IN)	EJ&E-10A,12,13B,13A,18, 0, 1,3,5B,22	
	Black-crowned night heron (<i>Nycticorax nycticorax</i>)	E (IL)	EJ&E-9B, 10A, 12, 13B, 14C, 15	
	King rail (<i>Rallus elegans</i>)	E (IL, IN)	EJ&E-12,13B,18, 0, 1, 3, 21, 22	
	Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	E (IL)	EJ&E-10A, 12, 13B, 13A, 14D,14C	
	American bittern (<i>Botaurus lentiginosus</i>)	E (IN)	EJ&E-0,1,3,22	
	Marsh wren (<i>Cistothorus palustris</i>)	E (IN)	EJ&E-0, 1, 3, 4, 20, 21,22	
	Virginia rail (<i>Rallus limicola</i>)	E (IN)	EJ&E-0,1,2,3,20,22	
Wetland reptile species	Blanding's turtle (<i>Emydoidea blandingii</i>)	T (IL), E (IN)	EJ&E-18, 9B, 23, 11, 12,13B,13A, 0, 1, 2, 3,21,22	Habitat loss or individual mortality in construction area
	Spotted turtle (<i>Clemmys guttata</i>)	E (IN)	EJ&E-0,1,3,22	
Wet forest plant species	Long-bract green orchid (<i>Coeloglossum viride</i> var. <i>virescens</i>)	T (IN)	EJ&E-0,1,3,22	Habitat loss or individual mortality in construction area
Pond plant species	Capitate spike-rush (<i>Eleocharis geniculata</i>)	T (IN)	EJ&E-0,1,2,3,21,22	Habitat loss or individual mortality in construction
	Horned bladderwort (<i>Utricularia cornuta</i>)	T (IN)	EJ&E-0,1,2,3,21,22	
	Lesser bladderwort (<i>Utricularia minor</i>)	T (IN)	EJ&E-0,1,2,3,21,22	

Table 4.11-5. Potential Effects on State-listed Species due to Construction Activities at the Proposed Connections

Guild ^a	Common and Scientific Name	Status ^b State	Segment ^c	Potential Effects
	Northeastern bladderwort (<i>Utriculata resupinata</i>)	E (IN)	EJ&E-0,1	area
Dry woodland plant species	Bristly sarsaparilla (<i>Aralia hispida</i>)	E (IN)	EJ&E-0,1,2,3,4,5B,22	Habitat loss or individual mortality in construction area
	Bluehearts (<i>Buchnera Americana</i>)	E (IN)	EJ&E-0,1,3,21,22	
	Pale corydalis (<i>Corydalis sempervirens</i>)	T (IN)	EJ&E-4,5B	
	Bicknell northern crane's-bill (<i>Geranium bicknellii</i>)	E (IN)	EJ&E-0,1,2,4,5B,22	
	Smooth veiny pea (<i>Lathyrus venosus</i>)	T (IN)	EJ&E-4,5B	
	Velvetleaf blueberry (<i>Vaccinium myrtilloides</i>)	E (IN)	EJ&E-5B	
	Leafy northern green orchis (<i>Platanthera hyperborean</i>)	T (IN)	EJ&E-0,1,2,3,22	
Grassland animal species	Franklin's ground squirrel (<i>Spermophilus franklinii</i>)	E (IN)	EJ&E-0,1,2,3,20,22	Habitat fragmentation

Sources:

- Brewer, Gwenda L., 1991, "1991 Summary Report: Location of Breeding Colonies and Evaluation of Critical Nesting Habitat for the Black Tern in Northwestern Minnesota: Kittson and Roseau Counties," Minnesota Department of Natural Resources.
- Chadde, Steve W., 2002, *A Great Lakes Wetland Flora*, 2nd Ed., Laurium, MI: Pocketflora Press.
- Coffin, Barbara A., and Lee Phannmuller, 1988, *Minnesota's Endangered Flora and Fauna*, Minneapolis: University of Minnesota Press.
- Connecticut Department of Environmental Protection, 2008, "Species and Habitats," *Connecticut's Comprehensive Wildlife Conservation Strategy*, retrieved on April 10, 2008, http://www.ct.gov/dep/cwp/view.asp?a=2723&q=325892&depNav_GID=1719&depNav=J.
- Currier, C.L., 2000, "Special animal abstract for *Chlidonias niger* (black tern)," Michigan Natural Features Inventory, Lansing, MI, available online at http://web4.canr.msu.edu/mnfi/abstracts/zoology/Chlidonias_niger.pdf.
- Ehrlich, Paul, David S. Dobkin, and Darryl Wheye, 1988, *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*, New York: Fireside Books.
- Gleason, Henry A., and Arthur Cronquist, 1991, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 2nd Ed., New York: New York Botanical Garden.
- INHS, 1997, "*Elliptio dilatata* (Rafinesque, 1820): Spike," retrieved on April 10, 2008, http://www.inhs.uiuc.edu/cbd/musselmanual/page68_9.html, December 15, 1997.
- INHS, 2004, "*Clemmys guttata* - Spotted Turtle," *INHS Amphibian & Reptile Collection*, retrieved on April 10, 2008, http://www.inhs.uiuc.edu/cbd/herpdist/species/cl_guttata.html, April 6, 2004.
- Mohlenbrock, Robert H., 1999, *The Illustrated Flora of Illinois: Sedges: Carex*, Carbondale, IL: Southern Illinois University Press.
- NatureServe, 2008, *NatureServe Explorer: An Online Encyclopedia of Life*, Version 7.0, retrieved on March 4, 2008, <http://www.natureserve.org/explorer/index.htm>.
- University of Michigan Museum of Zoology, 2008, *Animal Diversity Web*, retrieved on April 10, 2008, <http://animaldiversity.org>.
- Wisconsin Department of Natural Resources, 2007, "Wisconsin State Threatened and Endangered Species," *Wisconsin Department of Natural Resources*, retrieved on April 10, 2008, <http://www.dnr.state.wi.us/org/land/er/wlist/statelisted.asp>, January 4, 2007.
- Wisconsin State Herbarium, University of Wisconsin - Madison, 1999, *Asclepias lanuginosa*, retrieved on April 10, 2008, <http://www.botany.wisc.edu/herbarium/wisflora/atlas/ASCLAN.gif>.

Notes:

- ^a A guild is a functional category based on species' common life history traits and habitat requirements.
- ^b E = endangered, T = threatened
- ^c See Figure 3.1-1 for locations of the EJ&E segments.

- **Prairie Plant Species**

Prairie plant communities occur along the EJ&E rail line and within Kirk Yard. An INHS survey of prairie remnants only included areas accessible from public roadways and thoroughfares. It is possible other prairie remnants with the potential to contain state-listed species were not identified and may exist within construction limits for the connections. Prior to construction, SEA will require the Applicants to perform surveys to identify and locate state-listed species.

- **Wetland Plant Species**

All the construction areas for the proposed connections and the alternative configurations have the potential to contain wetland areas. Prior to construction, SEA will require the Applicants to perform surveys to identify and locate state-listed species.

- **Grassland Bird Species**

SEA expects minor reduction in grassland bird habitat resulting from construction of connections. Habitat is not anticipated to be substantially altered and the species currently occur in rail proximity. Construction of the proposed connections or their alternative configurations would not affect grassland bird species.

- **Marsh Bird Species**

SEA expects minor reduction in marsh bird habitat resulting from the construction of connections. The greatest effects on marsh birds would occur at the proposed Munger connection and its alternative configurations. Marsh bird species currently occur in proximity to the EJ&E rail line in the Pratt's Wayne Woods Forest Preserve. Ground disturbance could result in increased invasive species establishment, which could reduce the quality and quantity of marsh habitat.

- **Wetland Reptile Species**

Two state-listed wetland reptile species, Blanding's turtle and the spotted turtle, may occur near the Applicants' proposed Munger connection and its alternative configurations. Overall, connection construction may affect wetland reptile species.

- **Wet Forest Plant Species**

These species have the potential to occur in the proposed Griffith connection area along the fringe between upland forest and wetland areas. With the exception of the Griffith connection, construction would not affect state-listed wet forest plant species

- **Pond Plant Species**

One created pond is located within the construction limits of the Applicants' proposed Ivanhoe connection. This area could provide habitat for listed species associated with pond margins, based on proximity to High Quality Natural Areas (although this site appears to be very low-quality habitat). With the exception of the proposed Ivanhoe connection, construction would not affect state-listed pond plant species.

- **Dry Woodland Plant Species**

These state-listed plant species have the potential to occur within the construction limits of the Applicants' proposed Griffith connection area in dry oak forest. With the exception of the Proposed Griffith Connection, construction would not affect the state-listed dry woodland plant species.

- **Grassland Animal Species**

Elemental occurrence records indicate Franklin's ground squirrel occurs near EJ&E Segment 3, near the Applicants' proposed Ivanhoe connection. Construction of the Applicants' proposed Ivanhoe connection is not likely to adversely affect Franklin's ground squirrel. Construction of all other connections and alternate configurations would not affect the Franklin's ground squirrel.

Double Track

The Applicants propose to install double track along 19 miles of the EJ&E rail line. Construction of the double track would occur within the railroad ROW at five locations (Leithton, Diamond Lake Road to Gilmer Road, East Siding to Walker [two sections], and East Joliet to Frankfort). For further detail see Section 2.2.2.2, Double Track. SEA assessed the potential environmental effects of the double track on biological resources using the Applicants' preliminary plans and on a reasonable estimate of the potential area of ground disturbance (construction limits). The Applicants may revise the construction limits after they have finalized the design of the double track. The estimate of construction limits in this EIS represents the best available information and SEA considers them to be reasonable. Effects to plant communities occur at each of the following double track sections and represent direct loss of the landcover types as described.

Plant Communities.

- **Proposed double track-Leithton:**

Construction would affect a total of 4.9 acres, with 2.0 acres occurring on and adjacent to the existing rail bed. The remaining 2.9 acres would result in the direct alteration of 0.1 acre of ditched area, 1.3 acres of disturbed landscape dominated by young woody growth, 1.0 acre of *Phragmites*/cattail monotype wetlands and 0.5 acres of open water.

- **Proposed double track-Diamond Lake Road to Gilmer Road:**

Construction would affect a total of 13.9 acres within existing rail ROW, with 6.3 acres occurring on the existing rail bed or paved areas. The remaining 7.6 acres would result in the direct alteration of 0.1 acre of turf grass under mature oaks, 6.5 acres of disturbed cultural landscape dominated by woody growth, and 1.0 acre of immature forest dominated by box elder (*Acer negundo*), green ash, and buckthorn.

- **Proposed double track-East Siding to Walker:**

Construction would affect a total of 46.2 acres within existing rail ROW, with 17.5 acres occurring on the existing rail bed or embankment. Within the construction area, 25.5 acres are disturbed landscapes dominated by woody and herbaceous growth (12.4 acres grass and forbs, 1.0 acre of young immature forest trees, 6.3 acres of mixed woody and herbaceous growth, and 5.8 acres of unassociated woody growth), 1.1 acres of wetlands, 0.7 acre of ditched stream with a mix of *Phragmites* and sedges, and 1.4 acres of railroad ditch. Vermont Prairie and Illinois Natural History Survey (INHS) prairies are located near the EJ&E rail line, but SEA did not identify any remnant prairie areas within the construction area limits.

- **Proposed double track-East Joliet to Frankfort:**

Construction would affect a total of 37.2 acres within existing rail ROW, with 32.0 acres occurring on the existing railroad embankment or pavement. Of the remaining 5.2 acres, 1.0 acre is ditch; 1.9 acres are agricultural grasses (largely smooth brome (*Bromus inermis*) field); 0.5 acre is disturbed ground woody growth; 1.2 acres are immature wet

forest; 0.5 acre is wetlands; and 0.1 acre is degraded prairie (smooth brome with scattered little and big bluestem). The construction limits cross two creeks, Sugar Run and Jackson Branch, and their associated habitats.

Wildlife. Construction of double track would require the removal of habitat adjacent to the existing rail line. Only the double track at Leighton requires new ROW. Wildlife species living in patches of natural habitat within the construction limits of the proposed double track along the EJ&E rail line would be displaced. Because wildlife is mobile, SEA determined the double track construction would not affect wildlife. Wildlife may experience temporary increases in noise during construction.

Federal, State, and Local Conservation and Natural Areas. Construction of the three double track locations would occur within the railroad ROW. Therefore, double track construction would not affect any Federal, state, and local conservation or natural areas. Natural areas may experience temporary increases in noise during construction.

Federally-Listed Threatened and Endangered Species. Table 4.11-6, as follows, shows federally listed plant species that could occur in the double track construction limits. While no federally listed plant species are known to exist within the construction areas, habitat for these species may be present.

Table 4.11-6. Impacts to Federally Listed Species within the Study Area			
Common and scientific names	Federal status ^a	Location along rail line	Potential Impact
Mead's milkweed <i>Asclepias meadii</i>	T	EJ&E12	Individual mortality if located within construction area
Prairie Bush Clover <i>Lespedeza leptostachya</i>	T	EJ&E14B	Individual mortality if located within construction area
Eastern prairie fringed orchid (IL) or Prairie White Fringed Orchid (IN) <i>Platanthera leucophaea</i>	T	EJ&E12, EJ&E5B	Individual mortality if located within construction area

^a E=endangered species, T=threatened species

- **Eastern prairie fringed orchid and prairie white-fringed orchid**

This orchid, *Platanthera leucophaea*, has two common names: prairie white-fringed orchid in Indiana and eastern prairie fringed orchid in Illinois. The species has the potential to occur near the rail embankments near wetlands, ditches, and mesic prairie areas. Prior to construction, SEA will require the Applicants to perform surveys to identify any occurrences of this species within construction areas and mitigate for any potential impacts to individuals of this species.

- **Mead's milkweed**

Mead's milkweed (*Asclepias meadii*) has the potential to occur in late successional bunch grass prairie areas near the rail embankment. Prior to construction, SEA will require the Applicants to perform surveys to identify any occurrences of this species within construction areas and mitigate for any potential impacts to individuals of this species.

- **Prairie Bush Clover**

Prairie Bush Clover has the potential to occur in areas of dry prairie near the rail embankment. Prior to construction, SEA will require the Applicants to perform surveys to identify any occurrences of this species within construction areas and mitigate for any potential impacts to individuals of this species.

State-Listed Threatened and Endangered Species.

Table 4.11-7, as follows, shows state-listed T&E species that could occur in the double track construction limits. State-listed T&E species that might be affected by the construction of double track were grouped into functional categories called guilds based on common life history traits and habitat requirements. Species that are both Federal- and state-listed are discussed above. A more detailed examination of the guilds listed in the table and potential effects follows.

Table 4.11-7. Potential Effects on State-listed Species within Double Track Construction Limits				
Guild ^a	Common and Scientific Name	Status ^b (State)	Segment ^c	Potential Effects
Prairie plant species	Woolly milkweed (<i>Asclepias lanuginosa</i>)	E (IL)	EJ&E-14D	Habitat loss or individual mortality in construction area
	Prairie bush clover (<i>Lespedeza leptostachya</i>)	E (IL)	EJ&E-14D	
	Blazing star (<i>Liatris scariosa</i> var. <i>nieuwlandii</i>)	T (IL)	EJ&E-7D	
	Tube beard tongue (<i>Penstemon tubaeflorus</i>)	E (IL)	EJ&E-12	
Wetland plant species	Green-fruited burreed (<i>Sparganium emersum</i>)	E (IL)	EJ&E-13B, 13A	Habitat loss or individual mortality in construction area
	Marsh speedwell (<i>Veronica scutellata</i>)	T (IL)	EJ&E-13B, 13A	
	Little green sedge (<i>Carex viridula</i>)	T (IL)	EJ&E-12	
	White lady's slipper (<i>Cypripedium candidum</i>)	T (IL)	EJ&E-23, 12	
Grassland bird species	Henslow's sparrow (<i>Ammodramus henslowii</i>)	T (IL)	EJ&E-13A, 13B, 12, 5A	Habitat loss
	Short-eared owl (<i>Asio flammeus</i>)	E (IL)	EJ&E-12, 13B	
Marsh bird species	Henslow's sparrow (<i>Ammodramus henslowii</i>)	T (IL)	EJ&E-13A, 13B, 12, 5A	Habitat loss
	Short-eared owl (<i>Asio flammeus</i>)	E (IL)	EJ&E- 12, 13B	
	Black tern (<i>Chlidonias niger</i>)	E (IL)	EJ&E-12, 13B, 0 (IN), 1, 3, 20, 21, 22	
	Common moorhen (<i>Gallinula chloropus</i>)	T (IL)	EJ&E-12, 13B, 13A, 18	
	Sandhill crane (<i>Grus canadensis</i>)	T (IL)	EJ&E11, 12, 13B, 13A	
	Least bittern (<i>Ixobrychus exilis</i>)	T (IL)	EJ&E10A, 12, 13B, 13A, 18;	
	Black-crowned night heron (<i>Nycticorax nycticorax</i>)	E (IL)	EJ&E-9B, 10A, 12, 13B, 14C, 15	
	King rail (<i>Rallus elegans</i>)	E (IL)	EJ&E-12, 13B, 18	
	Yellow-headed blackbird (<i>Xanthocephalus xanthocephalus</i>)	E (IL)	EJ&E-10A, 12, 13B, 13A, 14D, 14C	
Wetland reptile species	Blanding's turtle (<i>Emydoidea blandingii</i>)	T (IL)	EJ&E-18, 9B, 23, 11, 12, 13B, 14B;	Habitat loss

- Brewer, Gwenda L., 1991, "1991 Summary Report: Location of Breeding Colonies and Evaluation of Critical Nesting Habitat for the Black Tern in Northwestern Minnesota: Kittson and Roseau Counties," Minnesota Department of Natural Resources.
- Chadde, Steve W., 2002, *A Great Lakes Wetland Flora*, 2nd Ed., Laurium, MI: Pocketflora Press.
- Coffin, Barbara A., and Lee Phannmuller, 1988, *Minnesota's Endangered Flora and Fauna*, Minneapolis: University of Minnesota Press.
- Connecticut Department of Environmental Protection, 2008, "Species and Habitats," *Connecticut's Comprehensive Wildlife Conservation Strategy*, retrieved on April 10, 2008, http://www.ct.gov/dep/cwp/view.asp?a=2723&q=325892&depNav_GID=1719&depNav=|.
- Currier, C.L., 2000, "Special animal abstract for *Chlidonias niger* (black tern)," Michigan Natural Features Inventory, Lansing, MI, available online at http://web4.canr.msu.edu/mnfi/abstracts/zoology/Chlidonias_niger.pdf.
- Ehrlich, Paul, David S. Dobkin, and Darryl Wheye, 1988, *The Birder's Handbook: A Field Guide to the Natural History of North American Birds*, New York: Fireside Books.
- Gleason, Henry A., and Arthur Cronquist, 1991, *Manual of Vascular Plants of Northeastern United States and Adjacent Canada*, 2nd Ed., New York: New York Botanical Garden.
- INHS, 1997, "*Elliptio dilatata* (Rafinesque, 1820): Spike," retrieved on April 10, 2008, http://www.inhs.uiuc.edu/cbd/musselmanual/page68_9.html, December 15, 1997.
- INHS, 2004, "*Clemmys guttata* - Spotted Turtle," *INHS Amphibian & Reptile Collection*, retrieved on April 10, 2008, http://www.inhs.uiuc.edu/cbd/herpdist/species/cl_guttata.html, April 6, 2004.
- Mohlenbrock, Robert H., 1999, *The Illustrated Flora of Illinois: Sedges: Carex*, Carbondale, IL: Southern Illinois University Press.
- NatureServe, 2008, *NatureServe Explorer: An Online Encyclopedia of Life*, Version 7.0, retrieved on March 4, 2008, <http://www.natureserve.org/explorer/index.htm>.
- University of Michigan Museum of Zoology, 2008, *Animal Diversity Web*, retrieved on April 10, 2008, <http://animaldiversity.org>.
- Wisconsin Department of Natural Resources, 2007, "Wisconsin State Threatened and Endangered Species," *Wisconsin Department of Natural Resources*, retrieved on April 10, 2008, <http://www.dnr.state.wi.us/org/land/er/wlist/statelisted.asp>, January 4, 2007.
- Wisconsin State Herbarium, University of Wisconsin - Madison, 1999, *Asclepias lanuginosa*, retrieved on April 10, 2008, <http://www.botany.wisc.edu/herbarium/wisflora/atlas/ASCLAN.gif>.

Notes:

- ^a A guild is a functional category based on species' common life history traits and habitat requirements.
- ^b E = endangered, T = threatened
- ^c See Figure 3.1-1 for locations of the EJ&E segments.

- **Prairie Plant Species**

Prairie plant communities occur along the EJ&E rail line, specifically near the proposed Walker to East Siding double track area. An INHS survey of prairie remnants only included areas accessible from public roadways and thoroughfares. It is possible other prairie remnants with the potential to contain state-listed species were not identified and may exist within double track construction areas. If these state-listed species are located in the area, direct individual harm and mortality could occur due to construction.

- **Wetland Plants**

Wetland plant communities occur near the proposed Diamond Lake to Gilmer Road double track. If these species are in the construction area, individual harm and mortality could occur due to construction.

- **Grassland Bird Species**

The double track construction is generally taking place within or immediately adjacent to existing rail embankment and SEA expects minor reduction in state-listed grassland bird habitat. SEA does not anticipate that habitat would be substantially altered and the species currently occur in rail proximity. The double track construction would not affect state-listed grassland bird species.

- **Marsh Bird Species**

The double track construction is generally taking place within or immediately adjacent to existing rail embankment and SEA expects minor reduction in state-listed marsh bird habitat. The species currently occur in proximity to the rail line. Ground disturbance could result in increased invasive species establishment, which could reduce the quality and quantity of marsh habitat. Chapter 6, Mitigation, discusses Best Management Practices to protect marsh habitat.

- **Wetland Reptile Species**

Two wetland reptile species, Blanding's turtle and the spotted turtle, may occur within the double track construction limits. The double track construction is generally taking place within or immediately adjacent to existing rail embankment and SEA expects minor reduction in wetland habitat. The existing rail line is already a barrier for movement, and construction of the double track would not further fragment the species' habitat. The construction of double track would not affect state-listed wetland reptile species.

Conclusion

Under the Proposed Action SEA found:

- Construction of the proposed connections would affect primarily railroad, paved, and disturbed areas, but would affect some wetlands and immature forest and prairie areas. This construction would potentially affect Federal and State protected species through habitat loss and direct individual species mortality though this risk appears very slight.
- Construction of the proposed Munger Connection would result in increased noise and some loss of habitat and require coordination with IDNR and the Forest Preserve District of DuPage County as a result of impacts to numerous listed species and their habitat.
- Construction of the proposed double track would mostly affect railroad and disturbed land, but would affect some immature forest, wetland, and degraded prairie. This would result in minor impacts to State protected species through a loss of bird habitat, construction noise and direct individual species mortality, however this risk appears very slight.

SEA acknowledges that under the Proposed Action up to several acres of wildlife habitat area would be affected by construction of the proposed connections and double track. SEA is recommending mitigation (discussed in Chapter 6, Mitigation) to reduce potential impacts to suitable habitat area.